

**Military Outsourcing: A Case Study of the Effects of Civilianization on  
Sailors' Retention Intentions**

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## **Abstract**

The U.S. Federal government is increasingly civilianizing the military as a manpower management strategy. Combining military personnel with civilians creates a bifurcated work setting resulting in differential structural and environmental job characteristics between service members and civilians. Analyses of the process and outcomes of federal civilianization of the military have focused predominantly on economic outcomes and have failed to confirm or refute its effectiveness as a management strategy. In this study I argue that social-psychological outcomes must be considered in evaluating the effects of military civilianization. Data gathered from a case study of the Navy are path analyzed to determine the direct and indirect effects of two civilianization variables (level of contact and social comparisons with civilians) on retention intentions.

Sailors report feeling relatively deprived compared to the civilian mariners with whom they work. These feelings of deprivation decrease with level of contact with civilians. Sailors report being satisfied with their jobs, but less satisfied than their civilian co-workers. Sailors' feelings of relative deprivation negatively impact their intentions to remain in the Navy past their current enlistment. These effects operate indirectly through job satisfaction and organizational commitment. Implications of these results and recommendations for future research are discussed.

### Statement of the Problem

The federal government is increasingly turning to civilians to perform jobs traditionally done by government personnel. The impact of bifurcating the workplace by combining full-time government employees with non-governmental personnel is not well understood. This paper examines the impact of the structural change brought on by civilianization of the Navy on the attitudes and behavioral intentions of active duty sailors. This study examines the degree to which sailors' level of contact with civilian mariners (CIVMARs), and social comparisons with civilian mariners, affects their job satisfaction, organizational commitment, and retention intentions, as these have been identified as critical social-psychological variables in predicting retention behavior.

### The Effect of Civilian Mariners working with the Navy

The structure of an organization has social-psychological impacts on its members. For example, negative impacts on employees resulting from organizational structure include heightened anxiety, increased affective symptoms of strain, challenges to personal identity, increased work-family conflict, distraction from work duties, reduced job satisfaction, and perceived loss of control (i.e. agency) in their work lives (Callan 1993, Kennedy et al. 2002, Nelson et al. 1995, Wong & McNally 1994).

Incorporating employees who operate under different normative and structural constraints into an organization may negatively impact social-psychological, structural, and economic outcomes. Some full-time employees see the loss of jobs due to downsizing and/or contracting as a source of instability (Baron and Kreps 1999, Wong & McNally 1994). The status ambiguity of non-core employees can also foster unease among full-time employees, as well as tension between full-time employees and non-core employees (Callan 1993, Nelson et al. 1995). For example, with regard to the military, to who does the CIVMAR answer to and take directives (not orders!) from, will a given CIVMAR remain with their Navy peers when they are deployed (especially to a war zone?), are the

rules and expectations for work and leisure time comparable, and what is their job description and can they perform duties not specifically itemized therein? Depending on how questions such as these are answered, organizational effectiveness, efficiency, cost saving, satisfaction, and morale may be negatively impacted.

The benefit most often cited in using civilians in jobs formerly held by military personnel is cost effectiveness. Assessments of civilianizing (generally contracting-out) work by the federal government indicate that anticipated cost savings have not been clearly achieved. This fact was highlighted by a GAO report (1995, p.i) in the statement: “We cannot convincingly prove nor disprove that the results of federal agencies’ contracting out decisions have been beneficial and cost-effective.” One obvious example of the ambiguous relationship between costs and benefits of employing non-federal workers to augment the full-time federal workforce is the alleged contribution of poor contract oversight and lack of emphasis on contractor performance outcomes by NASA to the Columbia space shuttle disaster (Smith & Stephens 2003, Smith et al. 2003).

Federal outsourcing in general, as well as military civilianization, is done in order to increase the flexibility, effectiveness, and efficiency of an organization by streamlining the full-time workforce and allowing it to focus on the core mission or specialty of the organization (Edwards 2003). In the federal government, the use of non-federal civilian employees (to include private industry contractors) is desirable whenever possible for the simple reason that the government should not compete with its citizens in producing products and performing services. Despite these motivations, both objective and subjective assessments reveal that employing non-core employees is not necessarily achieving the intended goals (GAO 1995, Singer 2003).

### Military Civilianization

*If we look at ...the Department of Defense we would see...a reduced official work force where we know how many people are employed and in what function, and what their salaries are in addition to a private contractor work force that has grown dramatically and at alarming rates. Their influence and impact is becoming more and more significant.*

*David Pryor – in Singer (2003: 45)*

The use of civilians by the U.S. military has been an integral part of the American war-making capacity since before the Civil War (Avant 2001, Robinson 2002). Indeed, the history of the U.S. military's use of civilians for national defense parallels the history of national defense itself. The multitude of civilians serving with the U.S. military in Afghanistan and Iraq is a continuation of this trend. However, this increased reliance on civilians in recent times should not be mistaken for a linear trend. To the extent that reliance on civilians varies over time, the use of civilians is best understood as a continuous variable that ebbs and flows with the socio-political changes within and among states.

The context for the current qualitative and quantitative shift in employing civilians is set by the confluence of three major forces coming together in the late 1980s and early 1990s. First, the end of the Cold War in Europe in the late 1980s brought about an organizational change in the U.S. military. The armed forces shifted from a large standing professional force that had been dictated by the Soviet Union's challenge as a world super power, to a smaller, more specialized fighting force. Since the number of missions and frequency of deployments have continued to rise in the wake of the Cold War resolution, increasing numbers of civilians have been hired to compensate for the reduction in military personnel (Light 1999, Moskos 2000, Singer 2003).

Second, the increasing technological sophistication required of many military specialties has resulted in a greater reliance on private sector support in order to maintain a cutting edge military. Light (1999) notes that the military's use of civilians is motivated by a desire to increase flexibility and freeing up military personnel to perform "core duties" by targeting qualified labor for specific project goals without carrying long term costs for training and maintaining personnel. Indeed, today

America's military cannot function effectively without these contractors.

Third, the scope of jobs performed by civilians has expanded dramatically, in part to the increasing reliance on technology (e.g. installation, maintenance, integration, and operation of weapons and surveillance systems) and in part to the reductions in military manpower. Further, operation tempo has increased, not decreased, in the past decade. As a consequence, in order to accomplish its goals the military has had to increasingly broaden the jobs it tasks to civilian personnel.

The massive push in recent years to civilianize jobs previously performed by military personnel begs the question of what impact this change will have on the attitudes and behavioral intentions of military personnel. Specifically, how does an organization structure characterized by differentiated classes of workers (i.e., military and civilian) affect the attitudes and behavioral intentions of Navy personnel?

Kennedy *et al.* (2002) argue that outsourcing can result in the remaining full-time employees becoming disenfranchised or simply disenchanted and leaving the organization. Consequently, civilianization may risk precisely those employees counted on most to carry out the organization's core missions separating from the military, leaving behind a problematic (and most likely unanticipated) skill and leadership vacuum. In addition, Moskos (1977) and Kim *et al.* (1996) argue that increases in occupational orientation of the military and transferability of skills to the civilian sector lead to recruitment and retention challenges. Job satisfaction is also linked to retention intentions directly and indirectly through organizational commitment (Kim *et al.* 1996).

There is a clear sense that military leaders are looking to utilize civilians so that uniformed personnel can increase their time and energy focusing on the core mission of the military: fighting and winning America's wars. Lt. Col. Bill McNight (2003: 1), Chief of the 9<sup>th</sup> Reconnaissance Wing Manpower and Organization Office, voices this goal of the U.S. military: "We want to apply our resources most directly to war fighting because that's what we do."

### *Total Force*

The movement to streamline the military as part of the “peace dividend,” is part of the larger “total force” concept. The total force notion conceptualizes all military assets (i.e., regular forces, National Guard and Reserve forces, Coast Guard, DoD civilian employees, and civilian contractors) as part of an interdependent force, mustered when needed and stood down when possible. This organization of defense forces is consonant with the pre-Cold War model of force structure and is expressly designed with flexibility, efficiency, effectiveness, and economy in mind.

The notion of total force is one of great interest and import given the organizational changes in the military currently underway. This organizational conceptualization raises a number of questions. To what extent are contractors and DoD civilian employees truly part of the military organization? When service members leave the military and join private military firms or return as DoD civilians, is it best understood as an issue of retention or a lateral move within the same organization? Alternatively, is the total force concept simply a marketing technique to build cohesion and solidarity among the various components of the “total force”? Since DoD civilians (and DoD civilian contractors) are already defined by the military as part of the total force should the government consider taking steps that would allow the military to deputize or conscript these individuals in times of national crisis for the sake of effectiveness, efficiency, and cohesion? While these questions are indeed important to contemplate, and will likely emerge as more central discussions among military, political, and academic leaders in the coming years, they are not central to this study. The brief discussion of total force is intended to serve as part of the motivation for the current study as another example of the blurring of lines between what is *military* and what is not.

### *Civilianization of the Military in Practice*

This study focuses on the effects of civilianization of the military on attitudes and behavioral intentions of military and civilian personnel that have the potential to impact the dynamics and structure of the military. Regardless of the conceptualization or categories applied to the actors involved, I am interested in how the integration of structurally distinct groups of workers affects the attitudes and intended behaviors of employees within a specific organizational context. Thus, the structure of the organization provides the context in which military and civilian personnel become explicit employment reference groups for each other, and as a result produces favorable or unfavorable views of one's employment situation.

Unfavorable social comparisons may lead to reduced satisfaction for some while maintaining high levels of commitment. Alternatively, even though satisfaction may be high as a result of some aspects of one's work, other aspects may trump such satisfaction and promote reduced commitment and/or the intention to separate from the organization. For military personnel, decreased satisfaction and commitment may prompt separation from the military for a multitude of other employment options (DoD civilian employee or DoD contractor are only two of many possible choices), or with no other specific option in mind – only that employment with the military is not desirable. DoD civilians may or may not have similar patterns of attitudes and behaviors as their military co-workers.

Jobs transferred to civilians may take the form of either product or service related jobs. In addition to performing menial jobs such as grounds maintenance and various mess hall duties, the increased reliance on civilians "is due to the military's greater reliance on technically complex weapons systems, with the corresponding need for technical experts, both contract and direct hires, to work in the field and at sea" (Robinson 2002: 21, see also Avant 2002 and Moskos 2000).

As noted earlier, the increasing technological sophistication required of many military specialties has resulted in a greater reliance on private sector support in order to maintain a cutting edge military. Light (1999) argues that outsourcing is motivated by a desire to increase flexibility by



targeting qualified labor for specific project goals without carrying long term costs for training and maintaining personnel (and their families). Economic constraints and personnel caps have also motivated force reductions and base closures. Thus, aside from soldiers, sailors, airmen, and marines perhaps becoming more “occupation” oriented themselves (Moskos 1977), there has been a conscious effort to infuse into the military a pure form of occupationally oriented personnel via DoD civilian employees (and contractors). Indeed, today America’s military cannot function effectively without these civilian employees.

Yet with all the administrative, legal, and normative support for outsourcing of government functions, there has not been a systematic study of the non-monetary (i.e., social-psychological) effects of such programs for the military. This lack in knowledge may be contributing to the disconnect between anticipated and observed outcomes.

### *Civilian Mariners*

A CIVMAR is defined as “a Federal government employee who works and sails on U.S. government owned Military Sealift Command ships” (MSC 2005). The CIVMARs aboard ship performed duties in one of three job categories: deck/maintenance, shipboard services (e.g., laundry, dining, cleaning), and engineering. As a consequence, there was no military-civilian redundancy on the ship. Those jobs performed by the civilian mariners were not (theoretically)<sup>1</sup> to be performed by the sailors, and vice versa. In this sense, though they were incorporated as organic components of the ship’s personnel, they were not structurally integrated with the sailors on a small organizational level. All CIVMAR personnel aboard ship, from cooks to engineers, were employees of Military Sealift

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<sup>1</sup> Several sailors expressed dissatisfaction and frustration at having to pick-up the slack of the CIVMARs in preparing for a major formal ceremony on board which involved cleaning the decks, scraping and reapplying paint, and hanging the ceremonial decorations. While historically this was a job that routinely fell upon the shoulders of the sailors, and they were fully capable of carrying out the duty, because the deck and maintenance duties had been civilianized the sailors felt doubly aggrieved. They had to perform menial extra duty with the

Command (MSC). What makes this ship especially interesting is that this ship was the first USS command ship to employ a joint military and civilian crew (Crutchfield 2005). The number and types of jobs the CIVMARs performed were a Navy experiment designed to examine the efficiency and effectiveness of integrating sailors and CIVMARs on a deployed USS ship. It should be clear that the jobs the civilians performed were routine jobs for CIVMARs – they do these kinds of jobs on all USNS ships. Rather, it was the situational context of integrating the two groups of employees on a USS ship that was novel.

### Model of Retention-Turnover<sup>2</sup>

Extensive research has been conducted on models of employee retention for civilian workforce populations. The military has been systematically excluded from all but a very few of these studies (exceptions include Hulin et al. 1985, Orthner 1990, Steele and Ovalle 1984, and Rakoff et al. 1992). While some models acknowledge social-psychological factors as variables that contribute to the overall development of job satisfaction and organizational commitment attitudes, explicit examination of social comparisons is conspicuously lacking in the literature. Notable exceptions include Crosby (1982), Hodson (1985), and Rakoff et al. (1992). However, neither Hodson nor Crosby examines military personnel and there are important limitations to the work of Rakoff et al's study of military personnel.

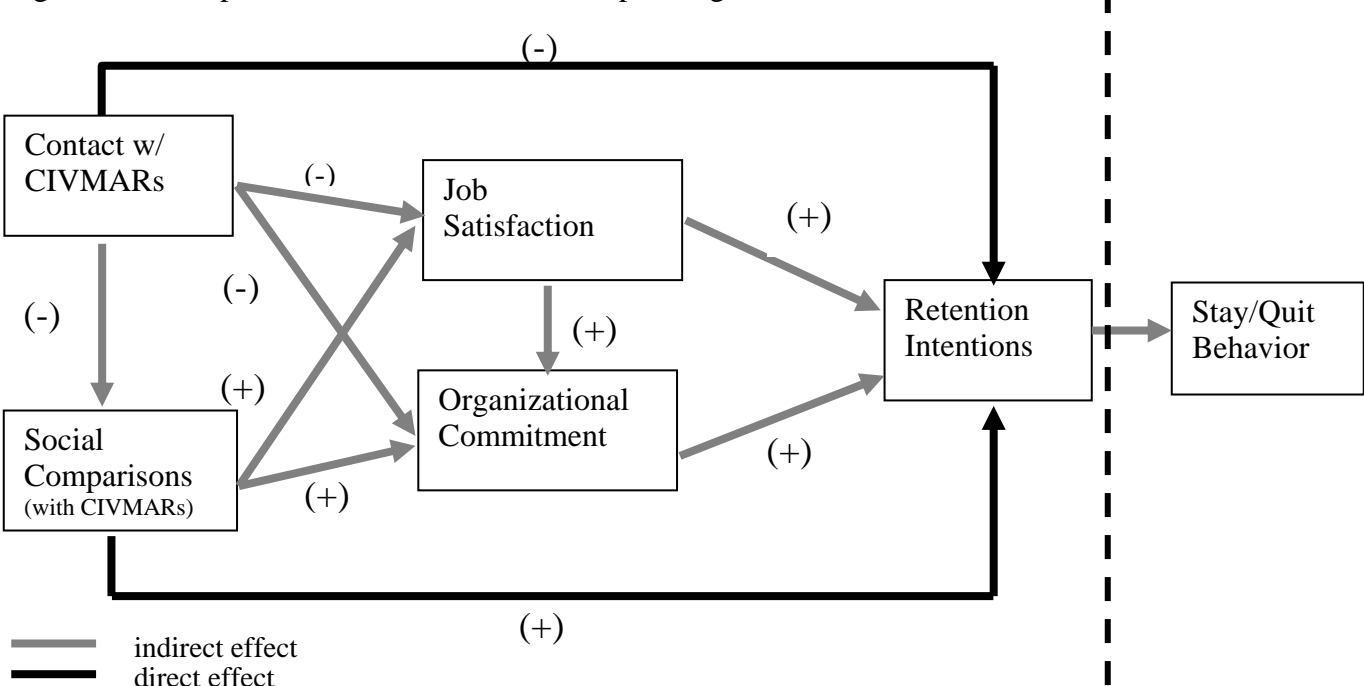
The retention-turnover model advanced for this study is based on the works of Price, Mueller, and colleagues (Kim et al. 1996, Mueller & Price 1990, Price 1977). This retention model builds on the major theoretical traditions in the field. Job satisfaction and organizational commitment are identified as directly affecting intentions to maintain employment with a current organization, which in

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recognition of a substantial pay differential between themselves and the CIVMARs, whose job it was to do the work in the first place.

turn are the immediate precursor to actual stay/quit behavior (Figure 1).

Figure 1. Conceptual Model of Retention Incorporating Civilianization Variables



Due to the cross-sectional nature of data for this study, stay/quit intentions are used as the outcome variable, rather than stay/quit behavior (indicated by the dashed line). Several studies examining retention intention and retention behavior have shown intentions to be highly correlated with subsequent behavior (e.g. Rakoff et al. 1992).

<sup>2</sup> This study's focus on turnover is limited to employees' voluntary separation from an organization. As such, employees who are fired, "downsized", not given the option of re-enlisting, or otherwise dissociated with the military are not included in this model or subsequent discussion.

## Satisfaction and Commitment of Employees

### *Job Satisfaction*

Job satisfaction is conceptualized as an attitude people hold regarding the work roles they occupy and the work they perform (Vroom 1964, Kalleberg 1977). This is necessarily a subjective assessment on the respondent's part indicating how much an individual likes her current work (Kalleberg 1977; Kim et al. 1996). Further, the attitudes that form a sense of job satisfaction have both cognitive and affective characteristics (Brief & Weiss 2002, Motowidlo 1996).

The literature on satisfaction and turnover has established that a significant negative relationship exists between satisfaction and turnover: increased levels of satisfaction decrease the likelihood of turnover (Locke 1976, Mobley 1977, Porter & Steers 1973). Variables commonly identified as important in determining job satisfaction include pay, benefits, promotion opportunities, working conditions (e.g., safety, pace, pleasant environment), job security, stimulation/challenge of work performed, autonomy, co-worker relations, scheduling/hours worked, perceived supervisor/organizational support, expectations, and occupational status (Kalleberg 1977, Locke 1976).

### *Organizational Commitment*

The study of organizational commitment emanates principally from conceptualizations and theories developed to analyze organizations in the civilian work force (see Mowday et al. 1979, Porter and Steers 1973, and Porter et al. 1974). Many of the structural and environmental variables affecting job satisfaction also impact organizational commitment. These effects are direct, and indirect via job satisfaction (Figure 1). The definition used in this study is adopted from Mowday et al. (1979: 226):

*Organizational commitment is the relative strength of an individual's identification with and involvement in a particular organization... characterized by a least three related factors: 1) a strong belief in and acceptance of the organization's goals and values; 2) a willingness to exert considerable effort on behalf of the organization; and 3) a strong desire to maintain*

*membership in the organization.*

Commitment represents an active (not passive) loyalty to one's organization.

A number of variables have been shown to negatively impact organizational commitment.

Work-family conflict has been noted to reduce employees' organizational commitment. The military in particular tends to foster this type of conflict because both institutions are considered "greedy" in their demand for service members' time and attention, resulting in increased distress/tension (Bourg & Segal 1999). Additional variables that negatively impact organizational commitment include job stress (via inconsistent job obligations), realities of the job meeting one's expectations, perceptions that the military institution has failed to keep its implicit contract of job security with its soldiers, and availability of alternative forms of (civilian) employment (Bourg & Segal 1999, Kim et al. 1996, Segal & Harris 1993, Wong & McNally 1994).

Factors that facilitate organizational commitment include reduced work-family conflict, clear and accurate communication from organizational leadership, social support (especially from one's spouse), positive relations with co-workers, leadership support, quality of life issues (e.g. safe, healthy environment for kids; satisfactory work/social opportunities for spouse; time with family; etc.), tenure (rank) with an organization, increased age, and number of children (Bourg & Segal 1999, Kim et al. 1996, Leiter et al. 1994, Segal & Harris 1993, Wong & McNally 1994).

Several aspects of military employment tend to heighten the importance of some of the structural, environmental, and personal factors identified in the retention-turnover model for military personnel in comparison to the civilian workers. Segal (1986) identifies five demands placed on service members and their families:

1. Risk of death or injury to service member,
2. Geographic mobility (movement of household every 2-3 years on average),
3. Periodic separation of service member from one's family,
4. Living overseas (on accompanied tours), and
5. Normative pressures placed on service members and their spouses

In addition to those identified by Segal, two other factors related to military employment are important to consider in an examination of retention: moral motivation for joining and remaining in military service (Reed & Segal 2000), and the unique contractual obligation of service that constrain when service members' are able to voluntarily leave the service.

### *Social Comparisons*

Social comparison is a key independent variable in this study and is defined as an individuals' comparisons with others on characteristics of interest (e.g. wealth, political views, and health). Social comparison is believed to be a fundamental social-psychological mechanism (Suls and Wheeler 2000), used by individuals to gauge their own ability, normalcy, uniqueness, sanity, sense of fairness in rewards and punishments, level of sacrifice or privilege, and so on. One may make such comparisons based on abilities, attitudes, emotions, observed inequalities in benefits or deprivations, or any number of criteria.

A fundamental assumption of social comparison theory is that human nature drives individuals to evaluate their opinions and abilities (Festinger 1954). Festinger (1954: 119) argues that, "to the extent that objective physical bases for evaluation are not available, subjective judgments of correct or incorrect opinion and subjectively accurate assessment of one's ability depend upon how one compares with other persons." Even when objective measures may be applied to behavior, opinion, or social outcomes, those measures must always be interpreted in a comparative manner if they are to meaningfully inform individuals about their relative standing compared to others. Judgments of good, accurate, poor, or normal are all based on social comparison.

A second important aspect of social comparison theory is that those included in one's comparison (or reference) group are perceived to have characteristics highly similar to one's own. Comparing oneself to those with substantially different abilities or opinions provides one with little

usable knowledge about oneself. While there are exceptions to this rule (e.g. upward and downward comparisons) that serve psychological coping and motivating functions, this study focuses on the core comparison process that predicts highly similar characteristics between the one performing the comparison and one's reference group. Positive comparisons indicate one is doing better than their reference group, whereas negative comparisons result from one feeling they are doing worse than their reference group by comparison. Social comparisons are observed to motivate cognition and behavior to resolve negative comparisons. Finally, the more salient the characteristic, the more likely it is to be a point of comparison.

While Festinger's theory emphasizes attitudes and behaviors, as noted above, social comparisons may be equally well applied to numerous other criteria such as housing quality, success of one's children, or in the case of the current study, job characteristics. In the military, behaviors motivated by social comparisons with contractors may translate into leaving the service. Conversely, social comparisons with contractors may lead to much higher institutional commitment and/or military identity among service members in order to validate continued affiliation with the military.

### Research Question

The Department of Defense has dramatically expanded the quantity of civilians it employs and the range of jobs that they are hired to perform as part of its civilianization effort to increase effectiveness, efficiency, and cost savings. The impact of bifurcating the workplace by combining military and civilian personnel across an ever-widening array of positions is not well understood. This study addresses the question, what impact does the structural change of civilianizing jobs formerly performed by military personnel have on the attitudes and retention intentions of sailors who deployed with CIVMARs on board? Specifically, this research examines whether and to what extent sailors' level of contact and social comparisons with CIVMARs affects their retention attitudes. To answer

this question, the effect of level of contact and social comparisons between groups on job satisfaction and organizational commitment is assessed, as these have been identified as critical social-psychological variables in predicting retention.

### Hypotheses

To address the question, what impact does the level of contact with CIVMARs and social comparisons with CIVMARs have on soldiers' satisfaction, commitment and retention attitudes the following hypotheses are tested.

H1: Sailors will compare themselves negatively to CIVMARs.

H2: Sailors with greater exposure to CIVMARs will report more negative social comparisons vis-à-vis CIVMARs than those with less exposure to CIVMARs.

H3: Sailors' level of exposure to CIVMARs and social comparisons with CIVMARs will negatively impact their job satisfaction, organizational commitment, and retention attitudes. Further, the negative impact on retention attitudes will be both direct and indirect (through satisfaction and commitment).

### Methods

This research is based on a single case study design, focusing on a single Army combat aviation squadron located outside the continental United States. This squadron consists of five troops (or units): an administrative unit, three flight line units, and one maintenance and service support unit. The civilian contractors working with this unit have been integrated as an organic part of the unit. The jobs they perform include engine and airframe mechanics, electronics, radar, and manning and maintaining the flight simulators. As a consequence, not only do the Soldiers in the flight line and maintenance troops work side-by-side with many of the contractors, the squadron would not be able to function effectively or efficiently without the expertise and proprietary knowledge these contractors bring with them.



### *Sample*

Sample subjects were voluntarily recruited from the Naval personnel aboard the ship. The ship was a command and control vessel with the U.S. Navy that included approximately 50 percent CIVMARs. A total of 125 sailors were assigned to the naval ship at the time of this study. Approximately a dozen sailors were not available due to leaves, training, or other temporary duties (TDYs) that took them off the ship. Of the sailors present during the time of data collection, surveys were given to approximately 110 sailors. One hundred and three surveys were returned (94% response rate), of which 84 were usable for analysis (76% usable response rate). The sailors' analysis presented in this study includes 67 percent of all sailors aboard ship during its deployment with civilian mariners.

The sailors included in this analysis do not differ dramatically from the characteristics of their population aboard ship with respect to race, age, and gender. The distribution of rank for the sailors in the sample is representative of all enlisted sailors and NCOs aboard ship. Population distributions were not available for years in service, years left in service, number of children, or marital status for either group in this case study.

### **Sailors' Descriptive Statistics**

The social-structural characteristics of the sailors and CIVMARs included in this study are summarized in Table 4.1. The modal sailor is an unmarried, white male with a high school education and no children. He has served for almost seven years and has just over 2 years of service obligations remaining. The mean age for sailors is approximately 27 years.

**Table 1. Sailors' Descriptive Statistics**

<b>Variable</b>	<b>f</b>	<b>%</b>	<b>mean</b>
Age			27.05
Years in service			6.71
Years left in service			2.30
Number of children	(mode = 0)		0.73
Gender			
men	78	92.9	
women	6	7.1	
Education			
high school or equivalent	62	73.8	
associates	15	17.9	
bachelors	7	8.3	
masters	0	0.0	
Marital Status			
never married	41	48.8	
married	34	40.5	
separated/divorced	9	10.8	
Rank/Pay Grade			
E1-E4	37	44.0	
E5-E9	47	56.0	
Race			
white	45	53.6	
black	14	16.7	
Asian	6	7.1	
other	19	22.6	

N=84

*Measurement*

The two independent variables based on civilianization of the Navy are level of contact with CIVMARs and social comparisons with CIVMARs. Level of contact was measured by asking, "In your current assignment, how often do you work directly with civilian mariners?" Response categories included a seven-point scale ranging from never to daily. The social comparison measure employed a 5-point Likert scale ranging from "much greater for civilian mariner" to "much greater for myself," with a neutral midpoint. Respondents were asked to situate their attitude on this scale in reference the following job characteristics: pay, benefits, risk, autonomy, task variety, promotional chances, quality leadership, organizational control over employee behavior, negative impacts on

family members' happiness, satisfying relations with coworkers, freedom to negotiate contract, degree to which organization cares for its employees, feeling of accomplishment from work, feeling of contributing to society, and time spent working per day.

Job satisfaction and organizational commitment were the two intervening variables and each was measured using a well-established scaled item. The job satisfaction measure consists of 24 items and is adapted from the short form of the Minnesota Satisfaction Questionnaire (Weis et al. 1967). This measure employs a 5-point Likert scale ranging from "strongly disagree" to "strongly agree" with a neutral midpoint. Organizational commitment is measured using the Organizational Commitment Questionnaire (Mowday et al. 1979). This 15-item scale is the most commonly used to measure the construct of organizational commitment and uses a 7-point Likert scale ranging from "disagree strongly" to "agree strongly" with a neutral midpoint.

The dependent variable for this study is retention intentions, measured using a single item. The question asked "Right now I am ..." and provided the following response categories: "planning to remain in the Navy, leaning toward remaining in the Navy, undecided, leaning toward leaving the Navy, planning to leave the Navy."

### *Data Collection Procedures*

Data were collected by paper and pencil questionnaire and administered in person by the author over a one-week period in November 2004. Subjects were assured that information provided in the questionnaires would be reported only in ways that would assure the anonymity of all respondents. Informal interviews were also conducted with Navy personnel in order to provide qualitative richness to the quantitative data obtained via the survey instrument.

Surveys were administered at two locations: the forward officers' mess and the main mess deck. Data from completed questionnaires were entered by the author into a data file for analysis. Independent entry of 15 percent of the surveys produced 98 percent reliability of data entry.

### Results

The initial stage of analysis identified the descriptive statistics for all model variables and established the reliability of the scale items to be used in the analysis of the conceptual retention model. Descriptive statistics, reliability estimates and correlations between all model variables are presented in Table 2. Standardized reliability estimates for the social comparisons, job satisfaction, and organizational commitment scales range from .71 to .89. Reliability coefficients of these magnitudes indicate that the three scales used in the path analyses have strong internal consistency.

**Table 2. Estimates of Internal Consistency and Correlations among Study Scales for Sailors**

Measure	alpha <sup>†</sup>	Intercorrelations				
		1	2	3	4	5
1. Contact with CIVMARs	---	1.00				
2. Social comparisons	.84	0.25*	1.00			
3. Job satisfaction	.89	0.02	0.48***	1.00		
4. Organizational commitment	.71	0.11	0.38**	0.53***	1.00	
5. Retention intention	---	-0.09	0.25*	0.23	0.33**	1.00

N = 84

<sup>†</sup> standardized Chronbach's alpha

\* p < .05

\*\* p < .01

\*\*\* p < .001

Correlations presented in Table 2 are partial correlations, controlling for age, sex, race, education, marital status, number of dependent children, number of work-related relocations, number and length of family separations in the past 12 months, confidence in finding civilian employment, rank, time in service, and time remaining in current service obligation. The results of the inter-item correlations of the sailors' model indicate that the social comparison variable is significantly and

positively correlated with each of the other four variables in the path model. This means that increases in sailors' level of contact with CIVMARS are related to more positive social comparisons ( $p < .05$ ). This result was counter to what was anticipated. Further, more positive social comparisons are associated with higher levels of satisfaction and commitment, and increased intention to remain with the Navy. Significant positive correlations are also observed between job satisfaction and organizational commitment, and organizational commitment and retention intentions. These results are in line with expectations. Interestingly, level of contact with civilian mariners was not related to satisfaction, commitment, or retention intentions. Also counter to expectations, job satisfaction was not significantly related to retention intentions.

#### *Individual Model Variable Tests*

T-tests of the sample means (not shown here) for the social comparison, satisfaction, and commitment scales against their respective neutral midpoints indicated that, on average, sailors compare themselves negatively to civilian mariners, and that they are satisfied with their jobs (mean deviations from their neutral midpoints were significant at  $p < .01$ ). However, sailors have only neutral organizational commitment to the Navy as an employer. Just over a third of the sailors indicated that they lean toward or plan on remaining in the Navy beyond their current enlistment obligation.

#### *Path Models*

The first step in analyzing the path model of retention intentions was to determine the fit of the data for the conceptual model presented earlier. Table 3 presents a summary of various fit indices commonly used in path analysis. The fit of the independence model, a model where the variables are not related at all, produced a chi-square of 71.26 for the sailors and 73.27 for the CIVMARS, which were significant at the  $p < .05$  level. Conversely, the chi-square statistics for the proposed model in

this study were 0.00 for the sailors and 4.63 for the CIVMARs. These results indicate that the proposed model does a much better job accounting for the variance in retention intentions for the sailors than does a model where the independent variables have no relation to one another. The Bentler-Bonett normed fit index (NFI) and the comparative fit index (CFI) surpass acceptable fit levels of .90 for both groups, lending additional support for the strength of the proposed model (Hoyle & Panter 1995). The chi-square statistic for the independence model is greater than both the Akaike's information criterion (AIC) and Bozdogan's consistent version of the AIC (CAIC), providing further evidence that the data are a strong fit with the proposed model (Bentler 1995). Taken collectively, these indices suggest a strong model for the sailors.

**Table 3. Fit Indices for Sailors' Model**

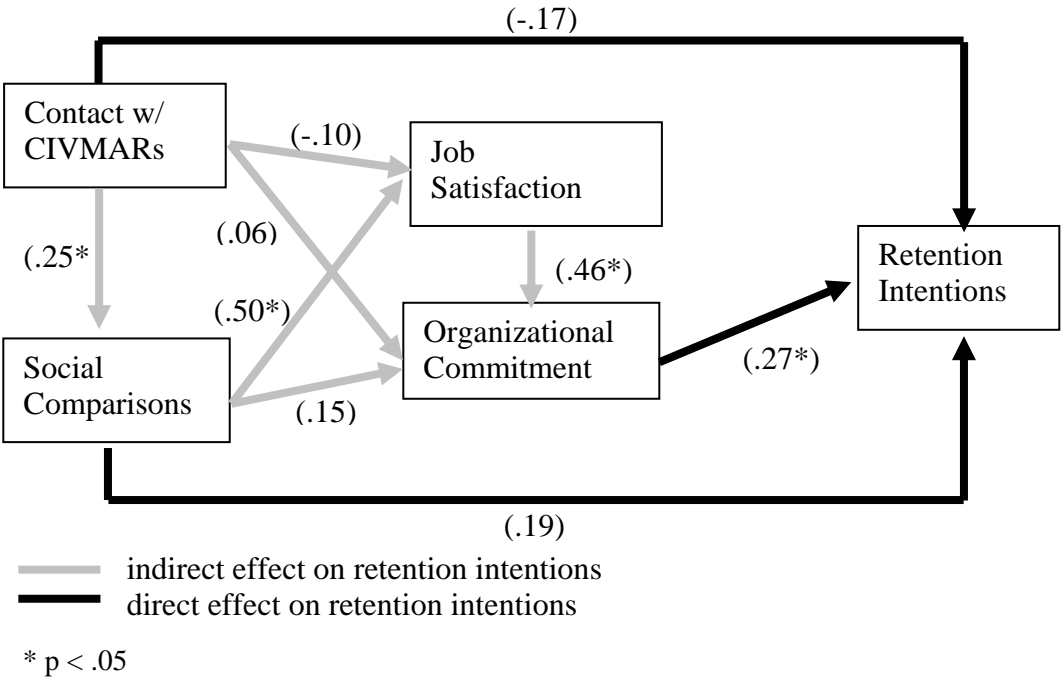
<b>Model</b>	<b>df</b>	<b><math>\chi^2</math></b>	<b>AIC</b>	<b>CAIC</b>	<b>NFI</b>	<b>CFI</b>	<b>RMSEA</b>
Independence Model	10	71.26	51.26	16.95	--	--	--
Proposed Model	1	0.00	-2.00	-5.43	0.99	1.00	0.00

Path analysis was used to examine both the direct and indirect effects of civilianization on retention intentions among sailors. Controls for the path analysis were the same as those used in the partial correlation analysis presented above. Results of path analysis of retention intentions are presented in Figure 2. The coefficients presented on the pathways of the models are the standardized, direct path coefficients. These path coefficients are interpreted in the same way as multiple regression coefficients. Coefficients with higher absolute values indicate that the predictor variable for that pathway is explaining a greater amount of variance in the pathway's outcome variable than a predictor variable with a lower absolute value coefficient.

The two pathways with darker arrows on the sailors' path model represent the direct effects of the two civilianization variables on retention intentions. The lighter arrows in the models indicate the

indirect pathways by which the civilianization variables affect retention intentions. The absence of a pathway leading from job satisfaction to retention intentions is deliberate. In order to run the path model at least one degree of freedom is necessary.

**Figure 2 Sailors’ Path Model with Estimated Path Coefficients**



Results from multiple regression models (not presented here) using the same control variables as the path analysis showed that job satisfaction did not have a significant direct impact on retention intentions. When the path analysis was rerun including the pathway from satisfaction to retention and omitting the pathway from contact with contractors to social comparisons the coefficient failed to reach significance. While regression analysis revealed that several model variables did not have a significant direct effect on retention intentions, a decision was made to retain all of the pathways related to the civilianization variables for illustrative purposes.

Results of the sailors’ path analysis indicate that although the signs of the two civilianization pathways are consistent with expectations neither of the two path coefficients are significant. Thus, any effects of civilianization on sailors’ retention intentions would have to be indirect. Additionally,

level of contact with CIVMARs failed to explain a significant amount of variance in satisfaction or retention, and social comparisons was not a significant predictor of organizational commitment among sailors.

The sailors' path coefficients are positive and significant between level of contact with CIVMARs and social comparisons (.25), social comparisons and job satisfaction (.50), job satisfaction and organizational commitment (.46), and organizational commitment and retention intentions (.27). Thus, the more contact sailors have with CIVMARs, the more positive their social comparisons, which lead to greater satisfaction with their work. Increased satisfaction significantly raises commitment to the Navy, which in turn elevates sailors' intentions to remain in the service. The civilianization variables seem to have a significant impact in the model, but examination of the total effects of the model is necessary to be more certain.

**Table 4. Total Effects on Sailors' Retention Intentions**

<b>Independent Variable</b>	<b>Indirect Effects</b>	<b>Direct Effects</b>	<b>Total Effects</b>
Contact with Civilian Mariners	0.08	-0.17	-0.09
Social Comparisons	0.10*	0.19	0.29*
Job Satisfaction	0.13*	--	0.13*
Organizational Commitment	--	0.27*	0.27*

N = 84

\*  $p < .05$

The indirect, direct, and total effects of the model's independent variables on retention intentions for sailors are presented in Table 5. Significant total effects are observed for social comparisons, job satisfaction, and organizational commitment. The largest total effect is associated with social comparisons (.29). The significant total effect of social comparisons on retention intentions is the product of a significant indirect effect (.10) operating through satisfaction and commitment, and a larger, though statistically non-significant, direct effect (.19).



The total effect associated with the organizational commitment variable is also significant (.27). This total effect is entirely due to the direct effect since there were no indirect pathways leading from organizational commitment to retention intentions. Conversely, the total effect of job satisfaction (.13) is entirely indirect, operating via organizational commitment. This is a product of the exclusion of the direct pathway from satisfaction to retention in order to maintain one degree of freedom in the model for analysis purposes. If this pathway were included (which theory and prior research would support), a non-significant direct effect would be obtained and a concomitant increase in the total effect would be observed. Since the effect of satisfaction is already significant, inclusion of the direct pathway would only serve to strengthen (not mitigate or reverse) this finding.

The total effect of level of contact with CIVMARs failed to reach significance. The fact that the indirect (.08) and direct (-.17) effects are in opposite directions contributes to this non-significant finding because their effects are canceling each other out in large measure. The positive value of the indirect effect of level of contact with CIVMARs is due to its significant positive relationship with social comparisons that then impacts retention intentions through the significant chain of pathways leading through satisfaction and commitment. The failure of the level of contact with CIVMARs variable to reach significance directly, indirectly, or in combination suggests that exposure to CIVMARs is not contributing substantially to the sailors leanings toward or away from continued service in the Navy.

The control measures used in the path analysis include age, race, gender, rank, number of children, highest educational degree attained, confidence in obtaining civilian employment if they left the Army, number of moves made by one's family as a result of military employment in their service career, number of nights spent away from duty station in last 12 months, duration of time away from duty station in last 12 months, and time in service and time left in service (both measured in years and months).

## Discussion

This paper examines effects of military civilianization on the attitudes and retention intentions of sailors who have recently returned from an extended deployment on a ship whose crew was 50 percent civilian mariner. This study's focus is on the social-psychological outcomes of civilianization rather than the more often measured fiscal outcomes that are expected from this management decision. This study demonstrates that organizational structure matters with respect to perceptions of relative advantage or deprivation on numerous highly salient job characteristics. Social comparisons are being made between military and civilian personnel that negatively affect sailors' retention attitudes. The negative effect of civilianization of the military on sailors' retention attitudes occurs indirectly through job satisfaction and organizational commitment.

These findings are an example of the irrationality of rationality. A primary motivation for civilianization of the military is to make it more streamlined and effective by allowing the service members who are retained as permanent employees to focus on performing the core mission of the military. However, the integration of the civilians with military personnel has resulted in negative comparisons among service members and a concomitant decline in their intentions to remain in service. As a result of its civilianization, the military is negatively affecting the retention attitudes of the soldiers and sailors on whom they are counting to remain in the military to carry on its core duties and to achieve the efficiency, effectiveness, and cost savings goals of civilianization.

Level of contact with CIVMARs was not related to satisfaction, commitment or retention for sailors, though it did affect their social comparisons (Fig. 4.2). While level of contact with CIVMARs significantly affected social comparisons for sailors, it was in the opposite direction from that predicted. Greater exposure to CIVMARs made sailors feel more advantaged by comparison, not more deprived. This result may be a function of the way in which civilianization was done on the Navy ship

as compared to the Army squadron in this study. Civilianization of military jobs on the ship was done by transferring entire departments to Military Sealift Command. One of the departments transferred to civilian (MSC) workers was the services department, which included jobs such as cooking, cleaning, and laundry. Deck maintenance was also civilianized, which included jobs such as scraping and reapplying paint to the ships interior and exterior surfaces. Additionally, watch standing was civilianized. In general, sailors were not required to post at the quarterdeck to monitor who boarded and disembarked the ship – this was the full-time job of a handful of CIVMARs.<sup>3</sup> Most of these jobs are ones typically performed by sailors as temporary duties on board USS ships.

It seems reasonable to argue that the more sailors observe CIVMARs performing these menial jobs, with the understanding that on most other Navy ships the sailors get tasked with the same jobs as extra duties, the more sailors feel advantaged by comparison. Thus, by virtue of the kinds of jobs that were civilianized aboard ship (jobs the sailors do not want), the sailors appear to have engaged in downward social comparisons, which is to say they feel they are comparing themselves with others whom they feel are less well-off. This has been noted in the literature as a self-esteem enhancing type of social comparison (Willis 1981). The CIVMARs may be relatively advantaged in some areas, but the more the sailors know about and interact with the CIVMARs, the less emphasis they appear to place on these advantages. This is consistent with sailors' responses to the commitment item about whether they would accept any job to remain in the Navy, indicating a strong preference for working within their specialty if they are to remain in service. Clearly there are jobs that the sailors do not want to do if they can be avoided – and the jobs that were civilianized appear to be high on the list.

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<sup>3</sup> During interviews, two sailors commented that a few times while the ship was in Asian ports, sailors were asked to stand watch-duty along side of CIVMARs. Both voiced dissatisfaction in having to listen to CIVMARs talk about the overtime they got paid for their duty. Sailors never get overtime, regardless of their job or the number of hours they work. The sailors felt they were being asked to do a job that others were being paid (very well) to do, and that their presence was not necessary at that duty station. This command decision was not popular with the sailors.

Neither contact with contractors nor social comparisons had a significant direct effect on retention intentions. This is further support that the mechanism by which social comparisons affect retention is mediated through job satisfaction and organization commitment. The social comparisons alone are not as important as how those comparisons affect one's satisfaction and commitment.

### Implications

The structure of an organization affects those who work there. Prior research has documented effects of structure on workers attitudes and retention behavior (Callan 1993; Deavel 1998; Kennedy *et al.* 2002; Merton 1961; Nelson *et al.* 1995; Wong & McNally 1994). This study fits within this tradition and its findings support the notion that workplace context impacts individuals' experiences which in turn shape their attitudes and intentions.

With the growing civilianization of the military, both civilian and military leaders have been expressing increased concern over the impact of military civilianization on the readiness of the armed forces (Avant 2004; Cha & Merle 2004; Crock *et al.* 2003; Phinney 2004; Robinson 2002; Singer 2003). In addition to these more manifest outcomes of military civilianization, military leaders need to be aware that their personnel are making comparisons with their civilian co-workers that affect retention (and potentially other important outcome variables such as morale and readiness).

Applewhite *et al.* (1993) suggest that the natural state of a service member may be one of perceived relative deprivation. In the context of the present study, Applewhite *et al.*'s assertion would suggest that even in the absence of civilians in their units military personnel will find someone else who is getting a better deal. In the present study, however, the (ubiquitous) feeling of relative deprivation among service members is corroborated by the civilians with whom they work who also feel that the military personnel are less well off than they are (civilian results not presented here). Regardless, military policy makers cannot afford simply to acknowledge that service members feel

relatively deprived and go about their regular routine as they did in the era of conscription when a steady flow of new recruits was guaranteed. Recruits are ever harder to come by now, and the loss of personnel with critical skills costs the military both in expertise and money.

Military and civilian leaders need to take the negative impact of social comparisons with civilians into account vis-à-vis retention (and morale, cohesion, and readiness). Military leadership can mitigate the negative effects of several variables shown to have significant impacts on social comparisons by making informed command decisions relating to the perception that the organization cares for its members, feeling of negative impacts on family, the level of organizational control over employee behavior, and creating efficient training and work schedules with an eye toward keeping reasonable work hours.

Organizational structure, in terms of what gets civilianized, is also important. For example, sailors were significantly negative on the item that asked whether they would accept any job assignment in order to stay with their current employer. Conversely, CIVMARs do not have significant results one way or the other on this variable. This suggests that the sailors view themselves as specialists rather than generalists, which is consistent with Moskos's (1977) occupational military model. Alternatively, this result could also mean that sailors don't value the Navy as an employer (or military service) more than the specific job they perform. This alternative explanation is also consistent with Moskos's (1977) occupational military model.

Given these findings, civilianizing the service and deck/maintenance departments aboard the Navy ship was a good command decision. By transferring these duties to civilians it eliminated the 90-100 days of "crank duty" that enlisted sailors typically have to perform. Crank duty is described by sailors as temporary duty assigned to most junior enlisted sailors who are new arrivals to a ship. In order to keep the ship operational a great deal of menial work must be done, such as cleaning, cooking, and the never-ending job of chipping and reapplying paint. Effectively, this means that sailors,

regardless of specialty (e.g., IT, radar, medical, engineering), must perform these menial jobs for upwards of three months before they are reassigned to their “real” job on board ship. One medical specialist commenting on this tradition stated, “There is nothing more disheartening than not being able to do my job.” In addition to doing menial labor, the time spent on crank duty affects sailors’ ability to maintain their skills in their specialty, which can impact their evaluations and promotion rate. Numerous sailors reported being very happy that the service and deck jobs aboard ship had been civilianized. Thus, by structuring the work environment so that core personnel were immediately assigned duties that they were trained for (and expected to do) civilianization of duties on board the ship appears to have achieved some of its goals.

The results presented in this study suggest that social comparisons can be positively influenced by increased contact between groups in the context of civilianizing entire categories of jobs that are viewed negatively by military personnel, especially those jobs that the service members would have to perform as extra duties. When the civilianized jobs are similar to those performed by the service members the positive effect of group contact disappears.

Despite the feelings of relative deprivation in comparison to their civilian co-workers, military personnel have many positive things to say about the civilians in their units. Sailors expressed a good deal of respect for the expertise, proficiency, and professionalism that their civilian co-workers bring to the unit. One sailor even commented that having the CIVMARs on board made the ship safer because, “sailors aren’t as thorough... CIVMARs are more responsible and get things done right.” Sailors also appreciated that because the civilians are outside of the formal hierarchical military structure they are more easy-going and speak their minds more freely. These qualities of the civilians were viewed positively because they break up the otherwise constant, rigid military environment.

It is interesting and important to note that several sailors and CIVMARs went out of their way to question why this study was being done. They did not feel there was a problem with the integration

of civilians on board the ship. Even so, the sailors studied are comparing themselves negatively to their civilian co-workers and these comparisons are negatively impacting their attitudes about remaining in military service. This is important because it demonstrates that even though the group of employees performing the “core duties” of the organization may not mind having the other group of employees in the organization, indeed they enjoy having them as part of the organization, the structural difference between groups and the differential benefits and constraints that accompany these structural differences generate negative social comparisons that impact satisfaction, commitment, and ultimately retention intentions. The negative effects of social comparisons do not appear to impact service members’ feelings toward their civilian coworkers.

The service members appear to be distinguishing between their affinity for the civilians as co-workers and the structural differences that define the work lives of service members versus civilian personnel. The contact hypothesis (Allport 1954) provides an explanation for the service members’ positive attitudes toward the civilians with whom they work. This hypothesis states that under certain necessary conditions interaction between individuals of different groups will result in more positive attitudes with regard to members of the “other” group (Pettigrew 1998). Even so, the perceived differences on highly salient job characteristics between civilians and service members produce negative comparisons among military personnel. This effect of social-structural variables, net of personal attitudes toward comparison others, is consistent with prior research on the fundamental impact of social comparisons on individuals’ attitudes based on highly salient items (Hodson 1985; Merton & Kitt 1950; Milkie 1999).

### *Future Research*

This research is a case study of the social-psychological effects of military civilianization on sailors who have deployed on board a ship with a significant proportion of the crew who were civilian

mariners. Future research should seek to test this model on additional units maintaining the case study model. It should also extend analysis to the other branches of the military. The different branches are employing civilians differently within their organization, have different organizational cultures, and different ratios of civilians to military personnel. One would expect to see differences by service branch with respect to which job characteristics are having the most influence on social comparisons, though not necessarily on the overall effect of social comparisons on satisfaction, commitment, and retention.

Future research should also examine effects of social comparisons by race and gender since these variables are known to affect retention rates in the military. Effects by military specialty should also be examined. It may be that some specialties experience a stronger effect from social comparisons (e.g., IT specialists) whereas the effect on others may be more muted (e.g., clerical). Deployment to a war zone may also have an impact on service members' social comparisons, since the differences between military personnel and contractors are likely to be most pronounced in this setting. Finally, the model presented in this paper is probabilistic. Longitudinal data are needed to demonstrate more rigorous support for the causal links hypothesized in this paper.



## References

- Allport, Gordon. 1954. *The Nature of Prejudice*. Cambridge, MA: Addison-Wesley Publishing Co.
- Avant, Deborah. 2001. "Selling Security: post Cold War Private Security Services in Historical Perspective." Paper presented at the American Political Science Association, San Francisco.
- Baron, James, and David Kreps. 1999. *Strategic Human Resources: Frameworks for General Managers*. New York: John Wiley & Sons.
- Bourg, Chris and Mady W. Segal. 1999. "The Impact of Family Supportive Policies and Practices on Organizational Commitment to the Army." *Armed Forces & Society* 25(4):633-652.
- Brief, Arthur P. and Howard M. Weiss. 2002. "Organizational Behavior: Affect in the Workplace." *Annual Review of Psychology* 53:279-307.
- Callan, Vicor J. 1993. Individual and Organizational Strategies for Coping with Organizational Change. *Work and Stress* 7(1): 63-75.
- Cha, Ariana E. and Renae Merle. 2004. "Line Increasingly Blurred Between Soldiers and Civilian Contractors." *Washington Post*, May 13, A1.
- Crock, Stan, Thomas F. Armistead, Anthony Bianco and Stephanie A. Forest. 2003. "Outsourcing War." *Business Week*, September 15, p68-75.
- Crosby, Faye J. 1982. *Relative Deprivation and Working Women*. New York: Oxford University Press.
- Crutchfield, Larry. 2005. "Coronado Remains Willing, Ready to Serve." March. Located April 2 at <http://www.msc.navy.mil/sealift/2005/March/coronado.htm>.
- Deavel, R. Philip. 1998. "The Political Economy of Privatization for the American Military." *Air Force Journal of Logistics* 22(2):3-9.
- Festinger, Leon. 1954. "A Theory of Social Comparison Process." *Human Relations* 7: 117-140.
- GAO. 1995 (March). "Government Contractors: An Overview of the Federal Contracting-Out Program." Statement of L. Nye Stevens, Director of Planning and Reporting, General Government Division. General Accounting Office: GAO/T-GGD-95-131.
- Hodson, Randy. 1985. "Workers' Comparisons and Job Satisfaction." *Social Science Quarterly* 66(2):266-295.
- Hulin, Charles L., Mary Roznowski, and Donna Hachiya. 1985. "Alternative Opportunities and Withdrawal Decisions: Empirical and Theoretical Discrepancies and an Integration." *Journal of Applied Psychology* 97(2):233-250.
- Kalleberg, Arne L. 1977. "Work Values and Job Rewards: A Theory of Job Satisfaction." *American Psychological Review* 42:124-143.

- Kennedy, James F. 2002. "The Influence of Outsourcing on Job Satisfaction and Turnover Intentions of Technical Managers." *Human Resource Planning* 25(1): 23-33.
- Kim, Sang-Wook, James L. Price, Charles W. Mueller, and Thomas W. Watson. 1996. The Determinants of Career Intent Among physicians at a U.S. Air Force Hospital." *Human Relations* 49(7):947-976.
- Leiter, Michael P., David Clark and Josette Durup. 1994. "Distinct Models of Burnout and Commitment Among Men and Women in the Military." *Journal of Applied Behavioral Science* 30(1):63-82.
- Light, Paul C. 1999. *The True Size of Government*. Washington, DC: Brookings Institution Press.
- Locke, Edwin A. 1976. "The Nature and Causes of Job Satisfaction." Pp. 1297-1350 in *Handbook of Institutional and Organizational Psychology*, Marvin M. Dunnett (ed.). Chicago: Rand McNally College Publishing Co.
- Merton, Robert K. 1961. "Bureaucratic Structure and Personality." Pp. 47-59 in *Complex Organizations: A Sociological Reader*, edited by A. Etzioni. New York: Holt, Rinehart.
- Merton, Robert K. and Alice S. Kitt. 1950. "Contributing to the Theory of Reference Group Behavior." Pp. 40-105 in *Continuities in Social Research: Studies in the Scope and Method of "The American Soldier,"* edited by Robert K. Merton and Paul F. Lazarsfeld. Glencoe, IL: Free Press.
- Milkie, Melissa A. 1999. "Social Comparisons, Reflected Appraisals, and Mass Media: The Impact of Pervasive Beauty Images on Black and White Girls' Self-Concept." *Social Psychology Quarterly* 62(2):190-210.
- Mobley, William H. 1977. "Intermediate Linkages in the Relationship Between Job Satisfaction and Employee Turnover." *Journal of Applied Psychology* 62(2):237-240.
- Mobley, W.H., R.W. Griffeth, H.H. Hand, and B.M. Meglino. 1979. "Review and Conceptual Analysis of the Employee Turnover Process." *Psychological Bulletin* 86(3):493-522.
- Moskos, Charles C. 1977. "From Institution to Occupation: Trends in Military Organization." *Armed Forces & Society* 4:41-50.
- Moskos, Charles C. 2000. "Toward a Postmodern Military: The United States as a Paradigm." Pp. 14-31 in *The Postmodern Military: Armed Forces After the Cold War*, Charles C. Moskos, John Allen Williams, and David R. Segal (eds.). New York: Oxford University Press.
- Motowidlo, Stephan J. 1996. "Orientation Toward the Job and Organization." Pp. 175-208 in *Individual Differences and Behavior in Organizations*, edited by K. R. Murphy. San Francisco: Jossey-Bass.
- Mowday, Richard T., Lyman W. Porter, and Richard M. Steers. 1979. "The Measurement of Organizational Commitment." *Journal of Vocational Behavior* 14:224-247.

MSC. 2005. "Web Information on Military Sealift Command." Located at <http://www.globalsecurity.org/military/agency/navy/msc.htm>.

Mueller, Charles W. and James L. Price. 1990. "Economic, Psychological, and Sociological Determinants of Voluntary Turnover." *Journal of Behavioral Economics* 19:321-335.

Nelson, Adrian, Cary L. Cooper, and Paul R. Jackson. 1995. Uncertainty Amidst change: The Impact of Privatization on Employee Job Satisfaction and Well-Being. *Journal of Occupational and Organizational Psychology* 68: 57-71.

Orthner, Dennis K. 1990. "Family Impacts on the Retention of Military Personnel." Paper presented at the Military Family Research Review Conference. Washington, D.C.

Pettigrew, Thomas F. 1998. "Intergroup Contact Theory." *Annual Review of Psychology* 49:65-85.

Phinney, David. 2004. "DoD Rule Would Permit Arming of Contractors." *Federal Times*, March 29, pp. 1, 10.

Porter, Lyman W. and Richard M. Steers. 1973. "Organizational, Work, and personal Factors in Employee Turnover and Absenteeism." *Psychological Bulletin* 80(2):151-176.

Porter, Lyman W., Richard M. Steers, Richard T. Mowday, and P.V. Boulian. 1974. "Organizational Commitment, Job Satisfaction, and Turnover Among Psychiatric Technicians." *Journal of Applied Psychology* 59:603-609.

Price, James L. 1977. *The Study of Turnover*. Ames, IA: The Iowa State University Press.

Rakoff, Stuart H., Janet D. Griffith, Gary A. Zarkin, Paul A. Gade, and Zita M. Simutis. 1992. Models of Soldier Retention. U.S. Army Research Institute: Army Project Number 2Q263731A792.

Reed, Brian J. and David R. Segal. 2000. "The Impact of Multiple Deployments on Soldiers' Peacekeeping Attitudes, Morale, and Retention." *Armed Forces & Society* 27(1):57-78.

Robinson, Linda. 2002. "America's Secret Armies: A Swarm of Private Contractors Bedevils the U.S. Military." *U.S. News & World Report* (Nov. 4) 133(17):38-43.

Segal, Mady W. 1986. "The Military and the Family as Greedy Institutions." *Armed Forces and Society* 13(1):9-38.

Segal, Mady W. and Jesse J. Harris. 1993. *What We Know About Army Families*. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Singer, Peter W. 2003. *Corporate Warriors: The Rise of the Privatized Military Industry*. Ithica, NJ: Cornell University Press.

Smith, Jeffrey and Joe Stephens. 2003. "Safety an Issue Since '90s: Experts Critical of Shuttle Program's Budget Cuts." *The Washington Post* February 3.

Smith, Jeffrey, Jody Warrick, and Rob Stein. 2003. "Experts Warned of Budget Cuts, Safety Concerns." *The Washington Post* February 2.

Steel, Robert P. and Nestor K. Ovalle, II. 1984. "A Review and Meta-Analysis of Research on the Relationship Between Behavioral Intentions and Employee Turnover." *Journal of Applied Psychology* 69(4):673-686.

Suls, Jerry and Ladd Wheeler. 2000. "A Selective History of Classic and Neo-Social Comparison Theory." Pp. 3-19 in J. Suls and L. Wheeler (eds.) *Handbook of Social Comparison: Theory and Research*. New York: Kluwer Academic/Plenum Publishers.

Vroom, Victor H. 1964. *Work and Motivation*. New York: John Wiley & Sons, Inc.

Weiss, David J., Rene V. Davis, George W. England and Lloyd H. Lofquist. 1967. *Manual for the Minnesota Satisfaction Questionnaire*. Minneapolis, MN: (Minnesota Studies in Vocational Rehabilitation XXII) University of Minnesota.

Willis, T. A. 1981. "Downward Comparison Principles in Social Psychology." *Psychological Bulletin* 90:245-271.

Wong, Leonard and Jeffrey McNally. 1994. "Downsizing the Army: Some Policy Implications Affecting the Survivors." *Armed Forces & Society* 20(2):199-216.